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Searches for User *bfubara* (Count = 6243)

Queries 6194 through 6243.

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S #	Updt	Database	Query	Time	Comment
S6243	U	USPT,PGPB,JPAB,EPAB,DWPI	us-5681862$.did.	2003-06-26 21:37:11	
S6242	U	USPT,PGPB,JPAB,EPAB,DWPI	(ionene polymer) and treat$4 and (mucositis or stomatitis)	2003-06-26 21:26:02	
S6241	U	USPT,PGPB,JPAB,EPAB,DWPI	ionene polymer	2003-06-26 21:25:43	
S6240	U	USPT,PGPB,JPAB,EPAB,DWPI	mucositis or stomatitis	2003-06-26 21:25:28	
S6239	U	USPT,PGPB,JPAB,EPAB,DWPI	(ionene polymer) and ((mucositis)and treat$4)	2003-06-26 16:02:19	
S6238	U	USPT,PGPB,JPAB,EPAB,DWPI	ionene polymer	2003-06-26 16:02:07	
S6237	U	USPT,PGPB,JPAB,EPAB,DWPI	(mucositis) and treat$4	2003-06-26 16:01:35	
S6236	U	USPT,PGPB,JPAB,EPAB,DWPI	mucositis	2003-06-26 16:01:22	
S6235	U	USPT	us-6160084$.did.	2003-06-25 19:13:01	
S6234	U	USPT	us-6246067$.did.	2003-06-25 19:10:34	
S6233	U	USPT	us-5869127$.did.	2003-06-25 18:51:22	
S6232	U	USPT	us-6261271$.did.	2003-06-25 18:39:59	
S6231	U	USPT	us-5541167$.did.	2003-06-25 16:46:11	
S6230	U	USPT	((((((424/dig.16)!.CCLS.)))and (heparin or dye or antibiotic))and coat$3) and (catheter or medical device)	2003-06-25 14:54:14	
S6229	U	USPT	(((((424/dig.16)!.CCLS.)))and (heparin or dye or antibiotic)) and coat$3	2003-06-25 14:54:11	

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(FILE 'HOME' ENTERED AT 18:10:58 ON 26 JUN 2003)

FILE 'ADISCTI, ADISINSIGHT, ADISNEWS, BIOSIS, BIOTECHNO, CANCERLIT, CAPLUS, CEN, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, DRUGNL, DRUGU, EMBAL, EMBASE, ESBIOBASE, IFIPAT, IPA, JICST-EPLUS, KOSMET, LIFESCI, MEDICONF, MEDLINE, NAPRALERT, NLDB, NUTRACEUT, ...' ENTERED AT 18:11:18 ON 26 JUN 2003

L1	36745	S	MUCOSITIS
L2	173	S	POLYIONENE
L3	1427552	S	INFLAMMATION OR ULCERATION
L4	4834	S	L3 AND L1
L5	2510	S	IONENE(P)POLYMER
L6	10	S	L3 AND L5

— Applicants + others that do not treat mucositis

=>

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=> d l6 ibib ab kwic 1-10

L6 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:555360 CAPLUS
DOCUMENT NUMBER: 137:103933
TITLE: **Ionene polymers** and their use in treating mucositis
INVENTOR(S): Fitzpatrick, Richard; Goddard, Philip J.; Barker, Robert H., Jr.; Shackett, Keith K.; Klinger, Jeffrey D.
PATENT ASSIGNEE(S): Geltex Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002056895	A2	20020725	WO 2002-US1118	20020117
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003021761	A1	20030130	US 2002-51766	20020117
US 2003031644	A1	20030213	US 2002-51765	20020117

PRIORITY APPLN. INFO.: US 2001-262586P P 20010118

AB A method of using **ionene polymers** for the treatment fo mucositis and oral mucositis in mammals is provided. The method comprises administering to a mammal an effective amt. of an **ionene polymer** to prophylactically or therapeutically treat mucositis. An example **polymer** prepd. was poly(hexamethylenebiscyanoguanidin e-alt-4,9-dioxadodecane). Also an example showed that polyionenes are effective in treating mucositis in a hamster model following irradn. therapy.

TI **Ionene polymers** and their use in treating mucositis

AB A method of using **ionene polymers** for the treatment fo mucositis and oral mucositis in mammals is provided. The method comprises administering to a mammal an effective amt. of an **ionene polymer** to prophylactically or therapeutically treat mucositis. An example **polymer** prepd. was poly(hexamethylenebiscyanoguanidin e-alt-4,9-dioxadodecane). Also an example showed that polyionenes are effective in treating mucositis in a hamster model following irradn. therapy.

ST **ionene polymer** prepn mucositis

IT Mucous membrane
(disease, **inflammation**; **ionene polymers** and their use in treating mucositis)

IT Ablation
Chemotherapy
Radiotherapy
(**ionene polymers** and their use in treating mucositis)

IT **Ionene polymers**
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological

study); PREP (Preparation); USES (Uses)
(**ionene polymers** and their use in treating mucositis)

IT Stem cell
(transplant; **ionene polymers** and their use in treating mucositis)

IT 28728-55-4P 31987-01-6P 53037-01-7P 53037-02-8P 53037-46-0P
53037-50-6P 158400-74-9P 158446-46-9P 443303-47-7P 443303-48-8P
443303-49-9P 443303-50-2P 443303-51-3P 443303-52-4P 443303-53-5P
443303-54-6P 443303-55-7P 443303-56-8P 443303-57-9P 443303-58-0P
443303-59-1P 443303-60-4P 443303-61-5P 443303-62-6P 443303-63-7P
443303-64-8P 443303-65-9P 443303-66-0P 443303-67-1P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**ionene polymers** and their use in treating mucositis)

L6 ANSWER 2 OF 10 USPATFULL

ACCESSION NUMBER: 2003:172706 USPATFULL
TITLE: Compositions and methods for inducing activation of dendritic cells
INVENTOR(S): Kabanov, Alexander V., Omaha, NE, UNITED STATES
Lemieux, Pierre, Ste-Therese, CANADA
Alakhov, Valery Yulievich, Longueil, CA, UNITED STATES
Vinogradov, Sergey V., Montreal, CANADA

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003118550	A1	20030626	
APPLICATION INFO.:	US 2001-845938	A1	20010430	(9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: MATHEWS, COLLINS, SHEPHERD & MCKAY, P.A., 100 THANET CIRCLE, SUITE 306, PRINCETON, NJ, 08540-3674
NUMBER OF CLAIMS: 77
EXEMPLARY CLAIM: 1
LINE COUNT: 3701

AB Compositions induce the activation of dendritic cells comprising a polynucleotide, such as viruses, RNA, DNA, plasmid DNA, or derivatives thereof and at least one block copolymer of alkylethers. The present invention further relates to compositions for inducing the activation of dendritic cells wherein the block copolymers are PLURONIC F127 and L61. More particular, the compositions comprise block copolymers PLURONIC F127/PLURONIC L61. The invention also relates to methods of inducing the activation of dendritic cells in animals comprising administering the compositions of the invention. Additionally, the present invention relates to methods of increasing the immune response of animals comprising administering the compositions of the present invention.

SUMM . . . 41-53 (1995). This high concentration of poly(vinyl pyrrolidone) poly(vinyl alcohol) needed to improve gene expression can be associated with toxicity, **inflammation**, and other adverse effects in muscle tissues. Block copolymers have been used to improve gene expression in muscle or to. . .

SUMM [0065] Polycations. Preferred polycation **polymers** and polycation segments of the copolymers include but are not limited to polyamines (e.g., spermine, polyspermine, polyethyleneimine, polypropyleneimine, polybutylene-imine, polypentyleneimine,. . . pyridine, and the quaternary ammonium salts of these polycation segments. These preferred polycation fragments also include aliphatic, heterocyclic or aromatic **ionenes**. Rembaum et al., **Polymer** Letters, 6:159 (1968); Tsutsui, T., Development in Ionic **Polymers**-2, Wilson A. D. and Prosser, H. J. (Eds.) Applied

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Science Publishers, London, New York, Vol. 2, pp. 167-187 (1986).

L6 ANSWER 3 OF 10 USPATFULL
ACCESSION NUMBER: 2003:44334 USPATFULL
TITLE: **Ionene polymers** and their use as antimicrobial agents
INVENTOR(S): Fitzpatrick, Richard J., Marblehead, MA, UNITED STATES
Shackett, Keith K., Athol, MA, UNITED STATES
Klinger, Jeffrey D., Sudbury, MA, UNITED STATES
PATENT ASSIGNEE(S): GelTex Pharmaceuticals, Inc., Waltham, MA, UNITED STATES (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003031644	A1	20030213	
APPLICATION INFO.:	US 2002-51765	A1	20020117	(10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-262586P	20010118 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133
NUMBER OF CLAIMS: 74
EXEMPLARY CLAIM: 1
LINE COUNT: 1415
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Disclosed are **ionene polymers** having antimicrobial activity. "**Ionene polymers**" as used in this invention are cationic **polymers** in which a substantial proportion of the atoms providing the positive charge are quaternized nitrogens located in the main polymeric chain or backbone of the **polymer** rather than in pendant groups. Also disclosed are antimicrobial compositions comprising **ionene polymers** and methods for treating microbial infections in mammals comprising the step of administering to a mammal, a therapeutically effective amount of at least one antimicrobial composition of the invention. Also disclosed are antimicrobial compositions comprising at least one **ionene polymer** and methods for preventing, inhibiting or eliminating the growth, dissemination, and/or the accumulation of microorganisms on a susceptible surface (including, but not limited to, the formation of biofilms on a susceptible surface) comprising the step of contacting such surface with a composition of the invention.

TI **Ionene polymers** and their use as antimicrobial agents

AB Disclosed are **ionene polymers** having antimicrobial activity. "**Ionene polymers**" as used in this invention are cationic **polymers** in which a substantial proportion of the atoms providing the positive charge are quaternized nitrogens located in the main polymeric chain or backbone of the **polymer** rather than in pendant groups. Also disclosed are antimicrobial compositions comprising **ionene polymers** and methods for treating microbial infections in mammals comprising the step of administering to a mammal, a therapeutically effective amount of at least one antimicrobial composition of the invention. Also disclosed are antimicrobial compositions comprising at least one **ionene polymer** and methods for preventing, inhibiting or eliminating the growth, dissemination, and/or the accumulation of microorganisms on a susceptible surface (including,. . .

SUMM [0013] In accordance with these and other aspects, the present invention provides novel **ionene polymers** having antimicrobial

activity. "**Ionene polymers**" or "polyionenes," as used in the present invention, are cationic **polymers** or copolymers with quaternized nitrogen or phosphorus located in the main polymeric chain or backbone of the **polymer**, providing a positive charge. Polyionenes can also be polyguanidines or copolymers thereof, where the cationic nitrogen atom is an imide nitrogen directly bonded to the **polymer** backbone. The **ionene polymers** of this invention have been found to be non-irritating and low in toxicity to warm-blooded animals. The present invention also provides antimicrobial compositions comprising **ionene polymers** and methods for treating microbial infections in mammals comprising the step of administering to a mammal, a therapeutically effective amount. . . of at least one antimicrobial composition of the invention. The present invention further provides antimicrobial compositions comprising at least one **ionene polymer** and methods for preventing, inhibiting or eliminating the growth, dissemination, and/or the accumulation of microorganisms on a susceptible surface (including,. . .

SUMM [0016] The present invention relates to **ionene polymers** that are particularly suitable for use in pharmaceutical compositions for treatment of microbial infections in mammals as well as for. . .

SUMM [0017] **Ionene polymers** may be classified according to the repeating unit found in the **polymer**. The repeating unit results from the reactants used to make the **ionene polymer**. Methods of preparing preferred **polymers** of the invention are included in the Examples.

SUMM [0018] One embodiment of the present invention is a "piperidinium" **ionene polymer** or copolymer comprising the repeating unit of formula I: ##STR1##

SUMM [0026] A second embodiment of the present invention is a second **ionene polymer** or copolymer comprising the repeat unit of formula VIIIa and the repeat unit of formula VIIIb: ##STR3##

SUMM [0030] The second **ionene polymer** can be a homopolymer when the repeat unit of formula VIIIa is the same as the repeat unit of formula. . .

SUMM [0031] In a preferred embodiment, the second **ionene polymer** or co-**polymer** comprises repeating units of formula IX: ##STR4##

SUMM [0034] Specific examples of the second **ionene polymer** or copolymer comprise repeat units of formulas X and XI. ##STR5##

SUMM [0035] A third embodiment of the present invention is a "guanidine" **ionene polymer** or copolymer comprising the repeating unit of formula XII: ##STR6##

SUMM . . . 3; x is 1 and y is 4; or x is 1 and y is 5. Specific examples of guanidine **ionene polymers** and copolymers comprise repeat units of formulas XIII and XIV. ##STR7##

SUMM [0038] Another embodiment of the present invention is a "pyridinium" **ionene polymer** or copolymer comprising repeating units of formula XV: ##STR8##

SUMM . .. . is an integer from 0 to 8). Each X.sup.-, separately or taken together, is a physiologically acceptable anion. Preferably, pyridinium **ionene polymers** and copolymers are substantially free of diphenols. "Substantially free" means that pyrdinium **ionene polymers** and copolymers comprise less than 5% diphenol, preferably less than 2% diphenol, even more preferably less than 1% diphenol, or. . .

SUMM [0040] Specific examples of pyridinium **ionene polymers** and copolymers comprise repeat unit of formulas XVI and XVII: ##STR9##

SUMM [0041] Other preferred **ionene polymers** of the invention are represented by the following group of repeat unit formulas: ##STR10##

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SUMM [0053] As shown in the following examples, **ionene polymers** of the invention have been found to be effective in treating microbial infections in a mammal, and have been found. . .

SUMM [0054] **Ionene polymers** of the invention and pharmaceutical compositions thereof provide numerous advantages over conventional therapies for treatment of microbial infections. As used. . . limited to well known antibacterial agents, such as vancomycin, metronidazole, penicillin, oxacillin, as well as antifungals, antiseptics and the like. **Ionene polymers** of the invention provide a broader spectrum of treatment than presently available antibiotics. **Ionene polymers** are not likely to elicit antibiotic resistance or polyresistance. **Ionene polymers** of the invention are not substantially degraded in the digestive tract and therefore, can be administered orally or topically. When desirable, **ionene polymers** of the invention may be designed such that they are not likely to be systemically absorbed by the body thus. . .

SUMM [0055] Therapeutically effective amounts of an **ionene polymer** to be administered will be determined on an individual basis, and will be determined at least in part, by consideration. . . treated and the result sought. As used herein, a therapeutically effective amount refers to an appropriate amount of active ingredient (**ionene polymer**) to obtain therapeutic or prophylactic effect and can be determined by standard pharmaceutical procedures in cell cultures or experimental animals.. . .

SUMM [0057] Microbial infections which can be treated by administering a therapeutically effective amount of an **ionene polymer** or a pharmaceutical composition thereof to a mammal infected with a microbe include, but are not limited to, bacterial infections,. . .

SUMM [0060] The **ionene polymers** and compositions of the invention are also particularly useful for inhibiting the growth and dissemination, of microorganisms, particularly on surfaces. . .

SUMM [0071] **Ionene polymers** of the present invention can be prepared by a reacting a divalent electrophile such as an .alpha.,.omega.-dihalogenated alkane or a. . .

SUMM [0072] A preferred method of preparing **ionene polymers** of the present invention comprises the step of reacting a diamine (e.g., an .alpha.,.omega.-diaminoalkane, an .alpha.,.omega.-alkylenedipyridine, or an .alpha.,.omega.-alkylenedipiperidine, a. . .

SUMM [0078] **Ionene polymers** of the invention may also be cross-linked with primary, secondary or other polyfunctional amines using means known in the art. **Ionene polymers** can be cross-linked by polymerizing in the presence of a multivalent nucleophile (i.e., a compound with three or more nucleophilic. . .

DETD . . . Phosphate.RTM. on Day 0. On Day 1 through Day 6 animals received 3 doses/day (0.75 ml/dose saline (controls) or the **polymer** of Formula II by oral gavage totaling 10 mg/animal/day. Animals were scored for survival on Day 6. Forty percent of animals receiving the **ionene polymer** of Formula II survived through Day 6, whereas only 10% of controls did so, indicating that the **polymer** of Formula II conferred a level of protective effect against C. difficile disease.

DETD . . . Mucositis was scored visually by comparison to a validated photographic scale, ranging from 0 for normal to 5 for severe **ulceration**. In descriptive terms, this scale is defined as follows:

Score	Description
0	Pouch completely healthy. No erythema or vasodilation.
1	Light to. . .

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DETD . . . stage of the disease, whereas a score of 3-5 is considered to indicate moderate to severe mucositis in which frank **ulceration** of the cheek pouch is evident. Treatment efficacy was measured by the reduction in time that the animals experienced ulcerative. . .

CLM What is claimed is:
72. A method of preparing an **ionene polymer**, comprising the step of reacting an .alpha.,.omega.-diaminoalkane, a diepoxide represented by the formula: ##STR46## wherein k is an integer from. . .
73. A method of preparing an **ionene polymer**, comprising the step of reacting an .alpha.,.omega.-alkylenedipiperidine represented by the formula: ##STR47## wherein k is an integer from 1 to. . .
74. A method of preparing an **ionene polymer**, comprising the step of reacting an .alpha.,.omega.-alkylenedipyridine represented by the formula: ##STR49## wherein k is an integer from 1 to. . .

L6 ANSWER 4 OF 10 USPATFULL

ACCESSION NUMBER:	2003:29819 USPATFULL
TITLE:	**Ionene polymers** and their use in treating mucositis
INVENTOR(S):	Fitzpatrick, Richard J., Marblehead, MA, UNITED STATES Goddard, Philip J., West Newton, MA, UNITED STATES Barker, Robert H., JR., Canton, MA, UNITED STATES Shackett, Keith K., Athol, MA, UNITED STATES Klinger, Jeffrey D., Sudbury, MA, UNITED STATES
PATENT ASSIGNEE(S):	GelTex Pharmaceuticals, Inc., Waltham, MA, UNITED STATES (2)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2003021761	A1	20030130	
APPLICATION INFO.:	US 2002-51766	A1	20020117	(10)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2001-262586P	20010118 (60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133
NUMBER OF CLAIMS:	32
EXEMPLARY CLAIM:	1
LINE COUNT:	844

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method of using **ionene polymers** for the treatment of mucositis and oral mucositis in mammals is provided. The method comprises administering to a mammal an effective amount of an **ionene polymer** to prophylactically or therapeutically treat mucositis.

TI **Ionene polymers** and their use in treating mucositis

AB A method of using **ionene polymers** for the treatment of mucositis and oral mucositis in mammals is provided. The method comprises administering to a mammal an effective amount of an **ionene polymer** to prophylactically or therapeutically treat mucositis.

SUMM . . . is characterized by breakdown of the oral mucosa, which results in the formation of ulcerative lesions. In granulocytopenic patients, the **ulcerations** that accompany mucositis are frequent portals of entry for indigenous oral bacteria leading to sepsis or bacteremia. Mucositis occurs to. . . for leukemia or with many of the

conditioning regimens for bone marrow transplant. Among these individuals, moderate to severe mucositis (**ulceration**) is not unusual in more than three-quarters of patients. The incidence of mucositis is even higher in younger patients. Moderate. . .

SUMM . . . Full thickness ulcers of the mucosa cause severe discomfort necessitating parenteral narcotic therapy. In addition, in the myelosuppressive patient, these **ulcerations** provide a systemic portal of entry for the oral microflora often leading to bacteremia and sepsis. Antimicrobial intervention is required.. . .

SUMM . . . basal layer; differentiation into new epithelial cells is halted. The arrest of epithelial cell renewal leads to atrophy followed by **ulceration**.

SUMM [0007] The method of treating mucositis comprises administering to the mammal an effective amount of an **ionene polymer**. In a preferred embodiment of the present invention, the **ionene polymer** comprises a repeat unit represented by Structural Formula (I): ##STR1##

SUMM [0016] The **ionene polymers** of the present invention have been found to be effective in the treatment of oral mucositis. The **ionene polymers** of this invention additionally have been found to be non-irritating and low in toxicity to warm-blooded animals.

SUMM [0017] The present invention provides a method of using **ionene polymers** in pharmaceutical compositions for the treatment of mucositis. "**Ionene polymers**" or "polyionenes," as used in the present invention, are cationic **polymers** or copolymers with quatemized nitrogen or phosphorus located in the main polymeric chain or backbone of the **polymer**, providing a positive charge. Polyionenes can also be polyguanidines or copolymers thereof, where the cationic nitrogen atom is an imide nitrogen directly bonded to the **polymer** backbone. The molecular weight of the **ionene polymers** of the present invention is generally not limiting, but each **polymer** typically comprises from 50 to about 500 repeat units.

SUMM [0018] Mucositis is defined herein as **inflammation** and/or **ulceration** of a mucous membrane. The disclosed method can be used to treat mucositis in the stomach, intestines, and the like; however, it is particularly effective when used to treat oral mucositis. Oral mucositis is characterized by **inflammation** of a mucous membrane of the oral cavity or lips and is typically accompanied by redness, swelling, and/or **ulcerations** of the mouth. Included in this description is oral mucositis that is a side-effect of anti-cancer therapies such as chemotherapy. . .

SUMM [0019] Treatment includes both prophylactic and therapeutic uses of the **ionene polymers**. Desired prophylactic effects include prevention of and inhibition of mucositis, reduction in severity of mucositis, reduction in size of mucositis. . . invention provides, in one aspect, a method of treating mucositis or oral mucositis comprising administering an effective amount of an **ionene polymer** .

SUMM . . . and Cy.sub.1 and Cy.sub.2 are each pyridinium groups and A is as defined above. In one example of a "pyridinium" **ionene polymer** of this type, the **polymer** is characterized by repeat units represented by Structural Formula (XVI): ##STR7##

SUMM [0026] Other specific examples of "pyridinium" **ionene polymers** are represented by Structural Formulas (XVIII), (XIX), (XX), (XXI), (XXII), (XXIII), and (XXIV): ##STR9##

SUMM . . . 3; x is 1 and y is 4; or x is 1 and y is 5. Specific examples of guanidine **ionene polymers** and copolymers comprise repeat units of formulas (XXVI), (XXVII), (XXVIII), and (XXIX): ##STR11##

SUMM [0032] As noted above, **ionene polymers** suitable for

use in the disclosed method include homopolymers and copolymers. The variables in each repeat unit of a copolymer. . .

SUMM [0033] In one example of an **ionene** copolymer where Q varies within the **polymer**, Q is represented by Structural Formula (II) and Structural Formula (III). This copolymer is comprised of repeat units represented by. . .

SUMM [0052] Suitable carriers and diluents for an **ionene polymer** will be immediately apparent to persons skilled in the art. These carrier and diluent materials, either organic or inorganic in. . .

SUMM [0053] An effective amount of an **ionene polymer** to be administered will be determined on an individual basis, and will be determined at least in part, by consideration. . . symptoms to be treated and the result sought. As used herein, an effective amount refers to an appropriate amount of **ionene polymer**, which results in a desired therapeutic or prophylactic effect with respect to mucositis, as defined above. Typical dosages for applied and/or ingested **ionene polymers** range from between about 0.05 .mu.g/kg body weight to about 500 mg/kg body weight, more typically between about 0.1 .mu.g/kg. . .

SUMM . . . of the head and neck, such as radiation patients. For prophylactic treatment of mucositis resulting from chemotherapy, treatment with an **ionene polymer** is initiated before the onset of the chemotherapy, during chemotherapy, after chemotherapy is complete but before symptoms appear or any combination of the above. For prophylactic treatment of mucositis resulting from radiation therapy, treatment with the **ionene polymer** is initiated before the onset of radiation therapy, during radiation exposure, after radiation exposure has been terminated (preferably no sooner. . . symptoms appear or any combination of the above. For therapeutic treatment of mucositis resulting from radiation therapy or chemotherapy, the **ionene polymer** is administered after symptoms of mucositis (e.g., mouth ulcers) have appeared.

SUMM . . . and the like), farm animals (horses, cattle, goats, and the like) and laboratory animals (hamsters, mice, rats, and the like). **ionene polymers** of the present invention can be prepared by a reacting a divalent electrophile such as an .alpha.,.omega.-dihalogenated alkane or a. . .

SUMM [0059] **Ionene polymers** of the invention may also be cross-linked with primary, secondary or other polyfunctional amine using means known in the art. **Ionene polymers** can be cross-linked by polymerizing in the presence of a multivalent nucleophile (i.e., a compound with three or more nucleophilic. . .

DETD . . . Mucositis was scored visually by comparison to a validated photographic scale, ranging from 0 for normal to 5 for severe **ulceration**. In descriptive terms, this scale is defined as follows:

Score	Description
0	Pouch completely healthy. No erythema or vasodilation.
1	Light to. . .

DETD . . . stage of the disease, whereas a score of 3-5 is considered to indicate moderate to severe mucositis in which frank **ulceration** of the cheek pouch is evident. Treatment efficacy was measured by the reduction in time that the animals experienced ulcerative. . .

CLM What is claimed is:

1. A method of treating mucositis in a mammal comprising administering to said mammal an effective amount of an **ionene polymer**.

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2. A method of treating mucositis in a mammal comprising administering to said mammal an effective amount of an **ionene polymer** characterized by a repeat unit having the formula: ##STR19## wherein R.sub.1 is a substituted or unsubstituted hydrocarbyl group; and each. . .

3. The method of claim 2, wherein said **ionene polymer** is administered therapeutically.

4. The method of claim 2, wherein said **ionene polymer** is administered prophylactically.

25. A method of treating mucositis in a mammal, comprising administering to said mammal an effective amount of an **ionene** copolymer characterized by a repeat unit of the formula: ##STR26## and a repeat unit of the formula: ##STR27## wherein R.sub.1. . . R.sub.2 and R.sub.3 are independently a substituted o r unsubstituted a liphatic or aromatic group; and each X.sup.- in the **polymer** or copolymer, separately or taken together with other X.sup.-s, is a physiologically acceptable anion.

L6 ANSWER 5 OF 10 USPATFULL

ACCESSION NUMBER:	2002:315337 USPATFULL
TITLE:	Absorbent materials with covalently-bonded, nonleachable, polymeric antimicrobial surfaces, and methods for preparation
INVENTOR(S):	Batich, Christopher D., Gainesville, FL, UNITED STATES Schultz, Gregory, Gainesville, FL, UNITED STATES Mast, Bruce A., Gainesville, FL, UNITED STATES Olderman, Gerald M., New Bedford, MA, UNITED STATES Lerner, David S., Boca Raton, FL, UNITED STATES Toreki, William, Gainesville, FL, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002177828	A1	20021128
APPLICATION INFO.:	US 2001-965740	A1	20010928 (9)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2002-857906, filed on 4 Jan 2002, PENDING Continuation-in-part of Ser. No. WO 1999-US29091, filed on 8 Dec 1999, UNKNOWN

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-111472P	19981209 (60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	VAN DYKE & ASSOCIATES, P.A., 1630 HILLCREST STREET, ORLANDO, FL, 32803
NUMBER OF CLAIMS:	51
EXEMPLARY CLAIM:	1
LINE COUNT:	1801

AB This invention relates to methods and compositions for materials having a non-leaching coating that has antimicrobial properties. The coating is applied to substrates such as gauze-type wound dressings. Covalent, non-leaching, non-hydrolyzable bonds are formed between the substrate and the polymer molecules that form the coating. A high concentration of anti-microbial groups on multi-length polymer chains and relatively long average chain lengths, contribute to an absorbent or superabsorbent surface with a high level antimicrobial effect.

SUMM . . . infection were essential to wound healing. These practitioners would reopen a wound that was not showing the expected pus and **inflammation**. This was changed by Lister's discoveries regarding

disinfection and the subsequent adoption of sterile bandage material for wound dressings. A. . .

SUMM . . . ammonium groups can be incorporated into polymeric substrates (without chemical bonding) in order to provide certain degrees of antimicrobial activity. **Ionene polymers** or polymeric quaternary ammonium compounds (polyquats), i.e., cationic **polymers** containing quaternary nitrogens in the **polymer** backbone, belong to a well-known class of biologically-active compounds. See, e.g., A. Rembaum, Biological Activity of Ionene **Polymers**, Applied **Polymer** Symposium No. 22, 299-317 (1973). Ionene **polymers** have a variety of uses in aqueous systems such as microbicides, bactericides, algicides, sanitizers, and disinfectants. U.S. Pat. Nos. 3,778,476, 3,874,870, 3,898,336, 3,931,319, 4,013,507, 4,027,020, 4,089,977, 4,111,679, 4,506,081, 4,581,058, 4,778,813, 4,970,211, 5,051,124, and 5,093,078 give various examples of these **polymers**, their preparation, and their uses. U.S. Pat. Nos. 3,778,476, 3,898,536, and 4,960,590, in particular, describe insoluble tri-halide containing **ionene polymers**. U.S. Pat. No. 4,013,507 describes **ionene polymers** which selectively inhibit the growth of malignant cells in vitro.

L6 ANSWER 6 OF 10 USPATFULL

ACCESSION NUMBER: 2002:222186 USPATFULL
TITLE: Method for coating medical device surfaces
INVENTOR(S): Keogh, James R., Maplewood, MN, UNITED STATES
Trescony, Paul V., Champlin, MN, UNITED STATES
Verhoeven, Michel, Maastricht, NETHERLANDS
Koullick, Edouard, Mastricht, NETHERLANDS

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2002120333	A1	20020829	
APPLICATION INFO.:	US 2002-54447	A1	20020122	(10)

	NUMBER	DATE	
PRIORITY INFORMATION:	US 2001-265370P	20010131	(60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Kenneth J. Collier, Medtronic, Inc., 710 Medtronic Parkway, Minneapolis, MN, 55432-5604
NUMBER OF CLAIMS: 236
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 2894
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for coating a medical device with a hydrophilic polymer is provided. One method of the present invention includes chemically binding under appropriate reaction conditions a hydrophilic polymer to a biomaterial surface. Another method of the present invention includes chemically binding under appropriate reaction conditions a hydrophilic polymer to a primer located on a biomaterial surface. Another method of the present invention includes chemically binding under appropriate reaction conditions a biomolecule to a hydrophilic polymer located on a biomaterial surface.

SUMM . . . and the medical industry to develop surfaces that are less prone in promoting the adverse biological reactions such as thrombosis, **inflammation** and infection that typically accompany the implantation of a medical device.

DETD [0085] Hydrophilic **polymers** may be polymerized from or comprising, for example, acrylamide monomers, methacrylamide monomers, 2-acrylamido-2-methylpropane sulfonic acid (AMPS), acrylic acid,

N-(3-aminopropyl) methacrylamide hydrochloride, N-vinylpyrrolidone, polyethylene oxide (PEO), saccharides or glycans such as hyaluronic acid or chondroitin sulfate. Other examples of hydrophilic **polymers** include poly(alkylene oxalate), poly(vinyl alcohol), **ionene** (ionic amine) **polymers**, caprolactone copolymers, chitin and its derivatives, agarose, cellulosic derivatives, poly(maleic anhydride) and polysaccharides. Hydrophilic **polymers** may be a naturally occurring or chemically synthesized.

CLM What is claimed is:

5. The method of claim 1 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer** , a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

15. The method of claim 11 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer** , a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

30. The method of claim 26 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer** , a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

46. The method of claim 42 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone,

a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

56. The method of claim 52 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

66. The method of claim 62 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylanido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

81. The method of claim 77 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

97. The method of claim 93 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**

, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

107. The method of claim 103 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

119. The method of claim 115 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

136. The method of claim 132 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

154. The method of claim 150 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone

copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

166. The method of claim 162 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

178. The method of claim 174 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

195. The method of claim 191 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

213. The method of claim 209 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer**

and a polysaccharide.
225. The method of claim 221 wherein the hydrophilic **polymer** is selected from the group consisting of a water-soluble **polymer**, a water-swellable **polymer**, a **polymer** comprising a hydrophilic chemical moiety, a **polymer** used to reduce friction on a surface, an acrylamide **polymer**, a methacrylamide **polymer**, a 2-acrylamido-2-methylpropane sulfonic acid **polymer**, an acrylic acid **polymer**, a N-(3-aminopropyl) methacrylamide hydrochloride **polymer**, a polyvinylpyrrolidone, a polyethylene oxide **polymer**, a saccharide, a glycan, a hyaluronic acid **polymer**, a chondroitin sulfate **polymer**, a poly(alkylene oxalate) **polymer**, poly(vinyl alcohol) **polymer**, an **ionene polymer**, a caprolactone copolymer, a chitin **polymer**, an agarose **polymer**, a cellulosic **polymer**, a poly(maleic anhydride) **polymer** and a polysaccharide.

L6 ANSWER 7 OF 10 USPATFULL

ACCESSION NUMBER:	2002:112878 USPATFULL		
TITLE:	Ligand for vascular endothelial growth factor receptor		
INVENTOR(S):	Tchistiakova, Lioudmila, Laval, CANADA Li, Shengmin, Laval, CANADA Pietrzynski, Grzegorz, Montreal, CANADA Alakhov, Valery, Baie d'Urfe, CANADA		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002058619	A1	20020516
APPLICATION INFO.:	US 2001-775743	A1	20010202 (9)
	NUMBER		DATE
PRIORITY INFORMATION:	US 2000-180568P		20000204 (60)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	GIBBONS, DEL DEO, DOLAN, GRIFFINGER & VECCHIONE, 1 RIVERFRONT PLAZA, NEWARK, NJ, 07102-5497		
NUMBER OF CLAIMS:	24		
EXEMPLARY CLAIM:	1		
LINE COUNT:	3407		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to compositions comprised of a peptide ligand or derivatives thereof that are capable of specific binding to the high affinity receptor-1 of vascular endothelial growth factor (VEGF) and structure similar receptors. The invention further provides a peptide ligand or derivatives thereof that are capable of inhibiting angiogenesis induced by VEGF. The present invention also provides a method for treatment or diagnosis of disease associated with angiogenesis in a patient in need of therapy comprising administering to the patient an effective amount of the pharmaceutical composition of the present invention and a pharmaceutical acceptable carrier.

SUMM . . . during wound healing (Brown et al., (1992) J. Ex. Med. 176:1375-9) and may be responsible for tissue edema associated with **inflammation** (Ferrara and Davis-Smyth (1997) Endocrine Reviews 18:4-25). In situ hybridization studies have demonstrated high VEGF expression in a number of. . .

SUMM . . . pyridine and the quaternary ammonium salts of the polycation segments. These preferred polycation segments also include aliphatic, heterocyclic or aromatic **ionenes** (Rembaum et al., **Polymer** letters, 1968, 6;159; Tsutsui, T., In Development in ionic **polymers** -2, Wilson A. D. and Prosser, H. J. (eds.) Applied Science Publishers, London, new York, vol. 2, pp. 167-187,

1986).

SUMM . . . with alkylhalides to produce tertiary and quaternized polyamines. Another useful type of cationic segments of well defined chemical structure are **ionenes** that can be aliphatic, heterocyclic or aromatic (Rembaum et al. **Polymer** Letters, 1968, 6:159; Tsutsui, T., Development in ionic **polymers**--2. Wilson, A. D. and Prosser, H. J. (eds.), Applied Science Publishers, London, New York, vol. 2, pp. 163-187, 1986).

SUMM [0223] Diseases associated with chronic **inflammation** can be treated by the compositions and methods of the present invention. Diseases with symptoms of chronic **inflammation** include inflammatory bowel diseases such as Crohn's disease, ulcerative colitis, psoriasis, sarcoidosis and rheumatoid arthritis. Angiogenesis is a key element that these chronic inflammatory diseases have in common. The chronic **inflammation** depends on continuous formation of capillary sprouts to maintain an influx of inflammatory cells. The influx and presence of the. . .

SUMM . . . inflammatory bowel diseases such as Crohn's disease and ulcerative colitis. Both Crohn's disease and ulcerative colitis are characterized by chronic **inflammation** and angiogenesis at various sites in the gastrointestinal tract. Crohn's disease is characterized by chronic granulomatous **inflammation** throughout the gastrointestinal tract consisting of new capillary sprouts surrounded by a cylinder of inflammatory cells. Inhibition of angiogenesis by. . .

SUMM [0226] The inflammatory bowel diseases also show extraintestinal manifestations such as skin lesions. Such lesions are characterized by **inflammation** and angiogenesis and can occur at many sites other than the gastrointestinal tract. The compositions and methods of the present. . .

SUMM . . . be treated according to the present invention is rheumatoid arthritis. Rheumatoid arthritis is a chronic inflammatory disease characterized by nonspecific **inflammation** of the peripheral joints. It is believed that the blood vessels in the synovial lining of the joints undergo angiogenesis.. . . the present invention using the ligand is particularly useful in preventing or inhibiting angiogenesis by endothelial cells at sites of **inflammation** and tumorigenesis.

SUMM . . . other retinopathies, retrolentral fibroplasia, neovascular glaucoma, age-related macular degeneration, thyroid hyperplasias (including grave's disease), corneal and other tissue transplantation, chronic **inflammation**, lung **inflammation**, nephrotic syndrome, preclampasia, ascites, pericardial effusion (such as associated with pericarditis) and pleural effusion. The following examples are intended merely. . .

L6 ANSWER 8 OF 10 USPATFULL

ACCESSION NUMBER:	2002:57879 USPATFULL
TITLE:	Polynucleotide compositions for intramuscular administration
INVENTOR(S):	Lemieux, Pierre M., Ste.-Therese, CANADA Kabanov, Alexander V., Omaha, NE, United States Alakov, Valery Y., D'Urfe, CANADA Vinogradov, Sergey V., Omaha, NE, United States
PATENT ASSIGNEE(S):	Supratek Pharma Inc., Doryal, United States (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6359054	B1	20020319
APPLICATION INFO.:	US 1999-227364		19990108 (9)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 1998-124943, filed		

on 30 Jul 1998, now patented, Pat. No. US 6221959 Continuation-in-part of Ser. No. US 1997-912968, filed on 1 Aug 1997 Continuation-in-part of Ser. No. US 1994-342209, filed on 18 Nov 1994, now patented, Pat. No. US 5656611
DOCUMENT TYPE: Utility
FILE SEGMENT: GRANTED
PRIMARY EXAMINER: Szekely, Peter
LEGAL REPRESENTATIVE: Mathews, Collins, Shepherd & Gould, P.A.
NUMBER OF CLAIMS: 25
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 0 Drawing Figure(s); 0 Drawing Page(s)
LINE COUNT: 2493
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions and methods for intramuscular administration of polynucleotides, such as RNA, DNA, or derivatives thereof comprising polynucleotides and block copolymers of alkylethers. The invention also provides compositions and methods for stabilizing polynucleic acids and increasing the ability of polynucleic acids to cross cell membranes and act in the interior of a cell.

SUMM . . . 41-53 (1995). This high concentration of poly(vinyl pyrrolidone) poly(vinyl alcohol) needed to improve gene expression can be associated with toxicity, **inflammation**, and other adverse effects in muscle tissues. Block copolymers have been used to improve gene expression in muscle or to. . .

SUMM Polycations. Preferred polycation **polymers** and polycation segments of the copolymers include but are not limited to polyamines (e.g., spermine, polyspermine, polyethyleneimine, polypropyleneimine, polybutilene-imine, poolypentyleneimine,. . . pyridine, and the quaternary ammonium salts of these polycation segments. These preferred polycation fragments also include aliphatic, heterocyclic or aromatic **ionenes** (Rembaum et al., **Polymer** letters, 6:159 (1968); Tsutsui, T., Development in ionic **polymers**-2, Wilson A. D. and Prosser, H. J. (eds.) Applied Science Publishers, London, New York, vol. 2, pp. 167-187, 1986).

L6 ANSWER 9 OF 10 USPATFULL
ACCESSION NUMBER: 2001:78709 USPATFULL
TITLE: Anhydrous skin lotions having antimicrobial components for application to tissue paper products which mitigate the potential for skin irritation
INVENTOR(S): Klofta, Thomas James, Cincinnati, OH, United States
Steinhardt, Mark John, Cincinnati, OH, United States
PATENT ASSIGNEE(S): The Procter & Gamble Company, Cincinnati, OH, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6238682	B1	20010529
APPLICATION INFO.:	US 1998-41231		19980312 (9)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1996-658342, filed on 5 Jun 1996, now patented, Pat. No. US 5830487, issued on 3 Nov 1998 Continuation of Ser. No. US 1995-398727, filed on 6 Mar 1995, now patented, Pat. No. US 5525345, issued on 11 Jun 1996 Continuation of Ser. No. US 1993-165767, filed on 13 Dec 1993, now abandoned
DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Dees, Jose' G.
ASSISTANT EXAMINER: Shelborne, Kathryne E.
LEGAL REPRESENTATIVE: Glazer, Julia A., Huston, Larry L., Rosnell, Tara M.
NUMBER OF CLAIMS: 28

10051818blessing

EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)
LINE COUNT: 2107
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An anhydrous lotion composition for killing viruses and bacteria in addition to imparting a soft, lubricious, lotion-like feel when applied to tissue paper and tissue paper treated with such lotion compositions are disclosed. The antiviral action of the lotion is due to the addition of an organic acid such as citric acid or salicylic acid. The antibacterial action is due to the addition of antibacterial agents such as TRICLOSAN.RTM.. The solubilization of the antiviral and antibacterial agents within the lotion matrix is aided by the addition of hydrophilic solvents and hydrophilic surfactants. The lubricious lotions also contain a plastic or fluid skin conditioning agent such as petrolatum, an optional immobilizing agent such as a fatty alcohol or fatty acid to immobilize the skin conditioning agent on the surface of the tissue paper web and a hydrophilic surfactant to improve wettability when applied to toilet tissue. Because less lotion is required to impart the desired soft, lotion-like feel benefits, detrimental effects on the tensile strength and caliper of the lotioned paper are minimized or avoided. The anhydrous nature of the lotions also aids in the maintenance of such physical properties as tensile and caliper.

SUMM As noted, the irritation, **inflammation** and redness around the nose and lips can have several causes. A prime one is, of course, the sheer necessity. . . . into the tissue, and wiping the resultant nasal discharge from the nose and surrounding area. The degree of irritation and **inflammation** caused by such blowing and wiping is directly proportional to: (1) the surface roughness of the tissue used; (2) the. . .

SUMM . . . but is intensely painful for people suffering from anal disorders and can excoriate even normal perianal skin, potentially causing irritation, **inflammation**, pain, bleeding, itching, and infection.

SUMM Hence, the irritation and **inflammation** potentially caused by the use of tissue products is a common drawback experienced by users of both toilet tissue and. . .

DETD **Ionene Polymers**

L6 ANSWER 10 OF 10 USPATFULL
ACCESSION NUMBER: 97:99313 USPATFULL
TITLE: **Ionene polymers** as microbicides
INVENTOR(S): Hollis, C. George, Germantown, TN, United States
Jaquess, Percy A., Tigrett, TN, United States
PATENT ASSIGNEE(S): Buckman Laboratories International, Inc., Memphis, TN, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 5681862		19971028	
APPLICATION INFO.:	US 1993-27097		19930305	(8)

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: O'Sullivan, Peter
LEGAL REPRESENTATIVE: Armstrong, Westerman, Hattori, McLeland & Naughton
NUMBER OF CLAIMS: 7
EXEMPLARY CLAIM: 1
LINE COUNT: 996
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for controlling the growth of at least one microorganism in an aqueous system susceptible to the growth of said microorganism and in recognized need of said control comprising the step of adding to said aqueous system an **ionene polymer** in an amount

effective to inhibit the growth at least one microorganism selected from Campylobacter spp., Mycobacterium spp., Shigella spp., ribrio spp., Yersinia spp., Entamoeba spp., and poliovirus. The aqueous system is selected from potable water, sewage, and other nonmarine surface water. Methods for controlling the spread of the diseases cholera and polio are also disclosed.

TI **Ionene polymers** as microbicides

AB . . . of said microorganism and in recognized need of said control comprising the step of adding to said aqueous system an **ionene polymer** in an amount effective to inhibit the growth at least one microorganism selected from Campylobacter spp., Mycobacterium spp., Shigella spp.,. . .

SUMM . . . methods for the microbicidal control of microorganisms in aqueous systems by treating the system with an effective amount of an **ionene polymer**. Particularly, it relates to methods for controlling the growth of species (ssp.) within the bacterial genera Campylobacter, Shigella, Vibrio and. . .

SUMM . . . large bowel of humans, primates, other mammals and birds. E. histolytica may penetrate the epithelial tissues of the colon, causing **ulceration** symptomatic of amoebic dysentery. The amoeba may spread from the colon to the liver via the portal bloodstream and produce. . .

SUMM . . . of the microorganism and in recognized need of such control comprising the step of adding to the aqueous system an **ionene polymer** in an amount effective to control the growth of at least one microorganism selected from Campylobacter spp., Mycobacterium spp., Shigella. . .

SUMM . . . of the microorganism and in recognized need of said control comprising the step of adding to the aqueous system an **ionene polymer** in an amount effective to control the growth of at least one microorganism selected from Mycobacterium bovis, Salmonella typhi, and. . .

SUMM . . . to the aqueous system in recognized need thereof, for the purpose of controlling the spread of cholera, an amount of **ionene polymer** effective in controlling the growth of Vibrio spp., wherein the aqueous system is selected from potable water, sewage, and other. . .

SUMM . . . to the aqueous system in recognized need thereof, for the purpose of controlling the spread of polio, an amount of **ionene polymer** effective in controlling the spread of poliovirus, wherein the aqueous system is selected from potable water, sewage, and other nonmarine. . .

SUMM . . . system is in recognized need of such control. The method comprises the step of adding to the aqueous system an **ionene polymer** in an amount effective to control the growth at least one microorganism selected from Campylobacter spp., Mycobacterium spp., Shigella spp.,. . .

SUMM . . . known to cause diseases in humans as well as other meals by contaminating the water supply. According to this invention, **ionene polymers** can be effective in controlling the growth of such microorganisms in aqueous systems and, thus, can be effective in controlling the spread of diseases caused by these microorganisms. Specifically, **ionene polymers** are shown below to be effective in the control of Campylobacter jejuni, Mycobacterium boris, Shigella dysenteriae, Vibrio cholerae, Vibrio parahaemolyticus,. . .

SUMM In the methods of this invention, an **ionene polymer** is used in an amount effective to accomplish the purpose of the particular method, i.e, to control the growth of. . .

SUMM The needs of the particular aqueous system determine what amount of **ionene polymer** will be required to achieve the desired level of control. The concentration of the **ionene**

polymer in a given aqueous system may be, for example, less than or equal to 50 ppm, and preferably less than. . . or equal to 20 ppm. More preferably, the concentration varies from 1 ppm to 10 ppm and most preferably, the **ionene polymer** is present in the aqueous system at a concentration of approximately 5 ppm.

SUMM . . . microorganism and in recognized need of that control. The method comprises the step of adding to the aqueous system an **ionene polymer** in an amount effective to control the growth of at least one of those microorganisms. The aqueous system includes those. . .

SUMM . . . to an aqueous system in recognized need thereof, for the purpose of controlling the spread of cholera, an amount of **ionene polymer** effective in controlling the growth of Vibrio species. The aqueous system includes those discussed above. Specifically contemplated are those aqueous. . .

SUMM . . . to the aqueous system in recognized need thereof, for the purpose of controlling the spread of polio, an amount of **ionene polymer** effective in controlling the spread of poliovirus. The aqueous system may be any of those discussed above and preferably is. .

SUMM Each of the above methods employs at least one **ionene polymer** to control the growth of the unwanted, disease causing microorganism in an aqueous system. **Ionene polymers** or polymeric quaternary immonium compounds, i.e., cationic **polymers** containing quaternary nitrogens in the **polymer** backbone (also known as polymeric quats or polyquats), belong to a well-known class of compounds.

SUMM **Ionene polymers** have been reported to possess biological activity. See, e.g., A. Rembaum, Biological Activity of **Ionene Polymers**, Applied **Polymer** Symposium No. 22, 299-317 (1973).

SUMM **Ionene polymers** have a variety of uses in aqueous systems such as microbicides, bactericides, algicides, sanitizers, and disinfectants. U.S. Pat. Nos. 3,874,870,. . . Pat. No. 5,093,078, the disclosures of all of which are specifically incorporated by reference herein, give various examples of these **polymers** and their uses.

SUMM **Ionene polymers** have also been used to inhibit surface adhesion of bacteria and algae, U.S. Pat. No. 5,128,100, the disclosure of which is specifically incorporated by reference herein. However, **ionene polymers** have heretofore not been known to be useful for controlling the growth of microorganisms such as Campylobacter, Shigella, Vibrio, Yersinia, Entamoeba and poliovirus in aqueous systems. It is thus believed that the uses claimed herein for **ionene polymers** are novel and are not suggested by any heretofore known uses.

SUMM **Ionene polymers** may be classified according to the repeating unit found in the **polymer**. This repeating unit results from the reactants used to make the **ionene polymer**.

SUMM A first type of **ionene polymer** comprises the repeating unit of formula I: ##STR1##

SUMM . . . a fraction of a polyvalent counter ion sufficient to balance the cationic charge in the repeating unit which forms the **ionene polymer** backbone. Preferably, X.sup.2- is two monovalent anions selected from a halide anion and a trihalide anion and more preferably, chloride or bromide. **Ionene polymers** having trihalide counter ions are described in U.S. Pat. No. 3,778,476. The disclosure of that patent is incorporated herein by. . .

SUMM The **ionene polymers** having the repeating unit of formula I may be prepared by a number of known methods. One method is to react a diamine of the formula R.sup.1 R.sup.2 N-B-NR.sup.1 R.sup.2 with

a dihalide of the formula X-A-X. **Ionene polymers** having this repeating unit and methods for their preparation are, for example, described in U.S. Pat. Nos. 3,874,870, 3,931,319, 4,025,627,. . . 4,027,020, 4,506,870 and U.S. Pat. No. 5,093,078; the disclosures of which are incorporated herein by reference. The biological activity of **ionene polymers** having the repeating unit of formula I is also described in these patents.

SUMM A second type of **ionene polymer** comprises the repeating unit of formula II: ##STR2##

SUMM . . . a fraction of a polyvalent counter ion sufficient to balance the cationic charge of the repeating unit which forms the **ionene polymer**. X.sup.- may be, for example, a halide or trihalide anion and is preferably chloride or bromide.

SUMM The **ionene polymers** having the repeating unit of formula II may be prepared by known methods. One method is to react an amine of the formula R.sup.1 R.sup.2 N with a haloepoxide such as epichlorohydrin. **Ionene polymers** having the repeating unit of formula II are, for example, described in U.S. Pat. No. 4,111,679 and U.S. Pat. No. 5,051,124, the disclosures of which are incorporated herein by reference. The biological activity of **ionene polymers** having the repeating unit of formula II is also described in these patents.

SUMM A third type of **ionene polymer** comprises a repeating unit of formula III: ##STR3## wherein R is ##STR4## Q is --(CHR').sub.p --, --CH.sub.2 --CH=CH--CH.sub.2 --, --CH.sub.2. . .

SUMM The **polymers** of formula III are derived from bis(dialkylaminoalkyl) ureas, which are also known as urea diamines, by known methods. **Ionene polymers** of the formula III, methods of their preparation, and their biological activities are, for example, described in U.S. Pat. No.. . .

SUMM **Ionene polymers** comprising the repeating units of formulae I, II, and III may also be cross-linked with primary, secondary or other polyfunctional amines using means known in the art. **Ionene polymers** can be cross-linked either through the quaternary nitrogen atom or through another functional group attached to the **polymer** backbone or to a side chain.

SUMM Cross-linked **ionene polymers**, prepared using cross-linking coreactants, are disclosed in U.S. Pat. No. 3,738,945 and Reissue U.S. Pat. No. 28,808, the disclosures of which are incorporated here by reference. The Reissue Patent describes the cross-linking of **ionene polymers** prepared by the reaction of dimethylamine and epichlorohydrin. The cross-linking coreactants listed are ammonia, primary amines, alkylenediamines, polyglycolamines, piperazines, heteroaromatic. . .

SUMM U.S. Pat. No. 5,051,124, the disclosure of which is incorporated herein by reference, describes cross-linked **ionene polymers** resulting from the reaction of dimethylamine, a polyfunctional amine, and epichlorohydrin. Methods of inhibiting the growth of microorganisms using such cross-linked **ionene polymers** are also described.

SUMM Other examples of various cross-linked **ionene polymers** and their properties are provided in U.S. Pat. Nos. 3,894,946, 3,894,947, 3,930,877, 4,104,161, 4,164,521, 4,147,627, 4,166,041, 4,606,773, and U.S. Pat.. . .

SUMM The **ionene polymers** comprising the repeating units of formulae I, II, or III may also be capped, i.e., have a specific end group.. . . may be achieved by means known in the art. For example, an excess of either reactant used to make the **ionene polymer** can be employed to provide a capping group. Alternatively, a calculated quantity of a monofunctional tertiary amine or monofunctional substituted or unsubstituted alkyl halide can be reacted with an **ionene polymer** to obtain a capped

ionene polymer. **Ionene polymers** can be capped at one or both ends. Capped **ionene polymers** and their microbicidal properties are described in U.S. Pat. No. 3,931,319 and U.S. Pat. No. 5,093,078, the disclosures of each. . .

SUMM Among the **ionene polymers** discussed above, a particularly preferred **ionene polymer** having a repeating unit of formula I is poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride. In this **ionene polymer**, R.sup.1, R.sup.2, R.sup.3 and R.sup.4 are each methyl, A is --CH.sub.2 CH.sub.2 OCH.sub.2 CH.sub.2 --, B is --CH.sub.2 CH.sub.2 --, and X.sup.2- is 2Cl.sup.-, and the average molecular weight is 1,000-5,000. This **ionene polymer** is available from Buckman Laboratories, Inc. of Memphis, Tenn. as Busan.RTM. 77 product, a 60% aqueous dispersion of the **polymer**, or WSCP.RTM. product, a 60% aqueous dispersion of the **polymer**. Busan.RTM. 77 and WSCP.RTM. are biocides used primarily in aqueous systems, including metalworking fluids for microorganism control.

SUMM Another particularly preferred **ionene polymer** having a repeating unit of formula I, also available from Buckman Laboratories, Inc. as Busan.RTM. 79 product, or WSCP II product is the **ionene polymer** where R.sup.1, R.sup.2, R.sup.3 and R.sup.4 are each methyl, A is --CH.sub.2 CH(OH)CH.sub.2 --, B is --CH.sub.2 CH.sub.2 --, and X.sup.2- is 2Cl.sup.-. This **ionene polymer** is a reaction product of N,N,N',N'-tetramethyl-1,2-ethanediamine, with (chloromethyl)-oxirane, and has a 1,000-5,000 average molecular weight. The **polymer** product Busan.RTM. 79 or WSCPII product is a 60% aqueous solution of the **polymer**.

SUMM Preferred **ionene polymers** having the repeating unit of formula II are those where R.sup.1 and R.sup.2 are each methyl, A is --CH.sub.2 CH(OH)CH.sub.2 --, and X.sup.- is Cl.sup.-. Busan.RTM. 1055 product is a 50% aqueous dispersion of such an **ionene polymer** obtained as a reaction product of dimethylamine with (chloromethyl)oxirane having a 2,000-10,000 average molecular weight.

SUMM Busan.RTM. 1157 product is a 50% aqueous dispersion of the **ionene polymer** having the repeating unit of formula II, obtained as a reaction product of dimethylamine with epichlorohydrin, cross-linked with ethylenediamine, where R.sup.1 and R.sup.2 are each methyl, A is --CH.sub.2 CH(OH)CH.sub.2 -- and X.sup.- is Cl.sup.-. This **ionene polymer** has a 100,000-500,000 average molecular weight.

SUMM Busan.RTM. 1155 product is a 50% aqueous dispersion of an **ionene polymer** having the repeating unit of formula II, where R.sup.1 and R.sup.2 are each methyl, A is --CH.sub.2 CH(OH)CH.sub.2 --, X.sup.- is Cl.sup.- and the **ionene polymer** is cross-linked with ammonia. This **ionene polymer** has a molecular weight of approximately 100,000-500,000.

SUMM Busan.RTM. 1099 product or Bubond.RTM. 65 product is a 25% aqueous dispersion of a cross-linked **ionene polymer** having repeating units of formula II, where R.sup.1 and R.sup.2 are each methyl, A is --CH.sub.2 CH(OH)CH.sub.2 --, X.sup.- is Cl.sup.-, the cross-linking agent is monomethylamine. This **ionene polymer** has a molecular weight of approximately 10,000-100,000.

SUMM Preferred **ionene polymers** having the repeating unit of formula III are those where R is a urea diamine and B' is CH.sub.2 CH(OH)CH.sub.2, and X.sup.- is Cl.sup.-. BL.RTM. 1090 is a 50% aqueous dispersion of the **ionene polymer** obtained as a reaction product of N,N'-bis-[1--(3--(dimethylamino)-propyl]urea and epichlorohydrin, such an **ionene polymer** having a 2,000-15,000, preferably 3,000-7,000, average molecular weight.

SUMM Each of the above **ionene polymers** and products identified by trade name is available from Buckman Laboratories, Inc. of

Memphis Tenn.

DETD **Ionene polymers** were evaluated for their effectiveness in killing Vibrio cholerae in two levels of water hardness. The following **ionene polymer** products were used: Busan.RTM. 77, Busan.RTM. 79, Busan.RTM. 1055, Busan.RTM. 1099, and Busan.RTM. 1157.

DETD For each **ionene polymer** product, the following weight/weight concentrations of the **ionene polymer** product in the test system were used: 0.0 ppm, 5.0 ppm, 10.0 ppm, and 20.0 ppm. V. cholerae ATCC #14035,. . . by plate count in alkaline trypticase soy agar. The results, which are summarized in Tables 1 through 5, show that **ionene polymers**, when used in accordance with the present invention, provide dramatic reductions in the viability of V. cholerae, as evidence by. . . surviving bacteria plated after 24 hours exposure. The complete kill, <10 cfu/ml survivors, at concentrations as low as 5.0 ppm **ionene polymer** product in AOAC hardness 300 ppm, indicates the effectiveness of **ionene polymers** against V. cholerae. The substantial decrease in the level of surviving V. cholerae in as little as 20 ppm in 4 out of 5 of the **polymers** at AOAC 900 ppm illustrates the effectiveness of **ionene polymers** against V. cholerae even in extremely hard water.

DETD **Ionene polymer** products Bubond.RTM. 65, Busan.RTM. 77, Busan.RTM. 79 and Busan.RTM. 1055 were evaluated for effectiveness in killing the bacteria Campylobacter jejuni,. . .

DETD **Ionene polymer** products Bubond.RTM. 65, Busan.RTM. 77, Busan.RTM. 79 and Busan.RTM. 1055 were evaluated for effectiveness in killing the protozoan Entamoeba histolytica. . .

DETD The concentration (ppm of the **ionene polymer** product in the test system) of Bubond.RTM. 65, Busan.RTM. 77, Busan.RTM. 79 and Busan.RTM. 1055 required to kill at least. . .

DETD **Ionene polymer** products Bubond.RTM. 65, Busan.RTM. 77, Busan.RTM. 79 and Busan.RTM. 1055, were evaluated for effectiveness against poliovirus. 0.3 ml of poliovirus. . .

CLM What is claimed is:

. . . of said microorganism and in recognized need of said control comprising the step of adding to said aqueous system an **ionene polymer** in an amount effective to control the growth of said at least one microorganism, wherein said aqueous system is selected from potable water, sewage, and other nonmarine surface water, and said **ionene polymer** comprises a repeating unit of the formula (I): ##STR6## wherein: R.sup.1, R.sup.2, R.sup.3, and R.sup.4 are each methyl; A is. . . --CH.sub.2 CH(OH)CH.sub.2 --; B is --CH.sub.2 CH.sub.2 --; and X.sup.2- is 2Cl.sup.- ; and wherein the molecular weight of said **ionene polymer** ranges from 1,000 to 5,000.

4. The method of claim 1, wherein the concentration of said **ionene polymer** in said potable water is 5 ppm.

. . . of said microorganism and in recognized need of said control comprising the step of adding to said aqueous system an **ionene polymer** in an amount effective to control the growth of said at least one microorganism, wherein said aqueous system is selected from potable water, sewage, and other nonmarine surface water, and said **ionene polymer** comprises a repeating unit of the formula (II): ##STR7## wherein: R.sup.1 and R.sup.2 are each methyl; A is --CH.sub.2 CH(OH)CH.sub.2 --; and X.sup.- is Cl.sup.- ; and wherein the molecular weight of said **ionene polymer** ranges from 2,000 to 500,000.

. . . to said aqueous system in recognized need thereof, for the purpose of

controlling the spread of cholera, an amount of **ionene polymer** effective in controlling the growth of at least one microorganism selected from Vibrio spp., wherein said aqueous system is selected from potable water, sewage, and other nonmarine surface water, and said **ionene polymer** comprises a repeating unit of the formula (I): ##STR8## wherein: R.sup.1, R.sup.2, R.sup.3, and R.sup.4 are each methyl; A is. . . --CH.sub.2 CH(OH)CH.sub.2 --; B is --CH.sub.2 CH.sub.2 --; and X.sup.2- is 2Cl.sup.- ; and wherein the molecular weight of said **ionene polymer** ranges from 1,000 to 5,000.

. to said aqueous system in recognized need thereof, for the purpose of controlling the spread of cholera, an amount of **ionene polymer** effective in controlling the growth of at least one microorganism selected from Vibrio spp., wherein said aqueous system is selected from potable water, sewage, and other nonmarine surface water, and said **ionene polymer** comprises a repeating unit of the formula (II): ##STR9## wherein: R.sup.1 and R.sup.2 are each methyl; A is --CH.sub.2 CH(OH)CH.sub.2 --; and X.sup.- is Cl.sup.- ; and wherein the molecular weight of said **ionene polymer** ranges from 2,000 to 500,000.